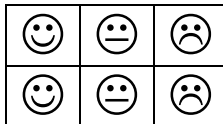
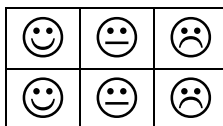


VECTORS

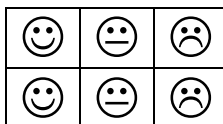
A: I can describe a vector



B: I can represent 2D vectors in component form



C: I can draw 2D vectors given in component form

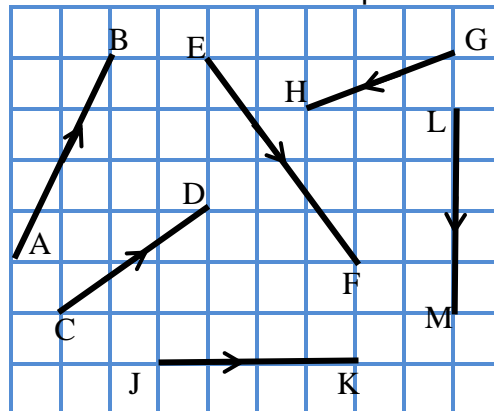


D: I can add and subtract two-dimensional vectors using directed line segments and component form.



What is a vector?

Write each vector in component form



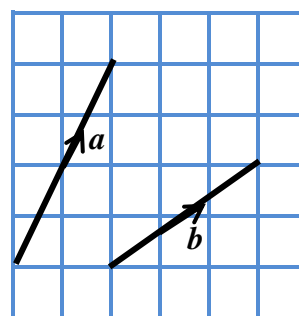
Sketch vectors:-

$$\overrightarrow{AB} = \begin{pmatrix} 2 \\ 5 \end{pmatrix} \quad \overrightarrow{CD} = \begin{pmatrix} 3 \\ -4 \end{pmatrix} \quad \overrightarrow{EF} = \begin{pmatrix} -1 \\ 2 \end{pmatrix}$$

$$\overrightarrow{GH} = \begin{pmatrix} 0 \\ 4 \end{pmatrix} \quad \overrightarrow{KL} = \begin{pmatrix} -2 \\ -7 \end{pmatrix} \quad \overrightarrow{MN} = \begin{pmatrix} -5 \\ 0 \end{pmatrix}$$

Using vectors **a** and **b**, find the resultant vectors:-

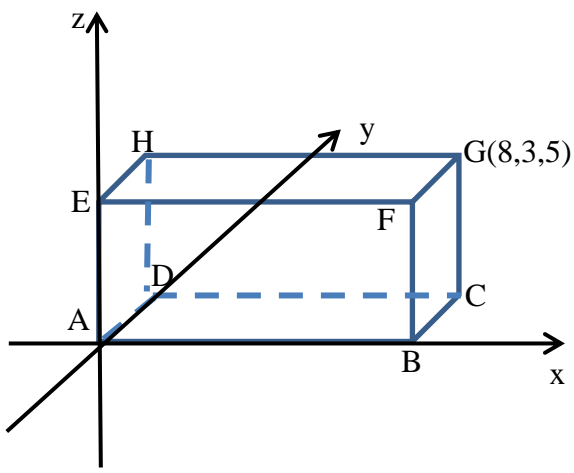
$$\mathbf{a} + \mathbf{b}, \mathbf{a} - \mathbf{b}, 2\mathbf{a} + 3\mathbf{b}, 3\mathbf{a} - 2\mathbf{b}, \frac{1}{2}\mathbf{a} + \mathbf{b}$$



From the diagram above (in B) draw the vector representing $\overrightarrow{AB} + \overrightarrow{EF}$.

Write the vectors $\overrightarrow{AB} + \overrightarrow{EF}$ in component form and find $\overrightarrow{AB} + \overrightarrow{EF}$.

Calculate 1) $\begin{pmatrix} 3 \\ -4 \end{pmatrix} + \begin{pmatrix} 6 \\ 7 \end{pmatrix}$ 2) $\begin{pmatrix} -2 \\ 4 \end{pmatrix} - \begin{pmatrix} -3 \\ -5 \end{pmatrix}$
 3) $\begin{pmatrix} 5 \\ 5 \end{pmatrix} + \begin{pmatrix} -2 \\ 8 \end{pmatrix} - \begin{pmatrix} 3 \\ 1 \end{pmatrix}$

<p>E: I can determine the coordinates of a point in 3D.</p>	<table border="1"> <tr> <td>😊</td><td>😐</td><td>😞</td></tr> <tr> <td>😊</td><td>😐</td><td>😞</td></tr> </table>	😊	😐	😞	😊	😐	😞	<p>Write down the coordinates of the vertices of the cuboid.</p> 
😊	😐	😞						
😊	😐	😞						
<p>F: I can add and subtract 3D vectors in component form</p>	<table border="1"> <tr> <td>😊</td><td>😐</td><td>😞</td></tr> <tr> <td>😊</td><td>😐</td><td>😞</td></tr> </table>	😊	😐	😞	😊	😐	😞	<p>If $a = \begin{pmatrix} 3 \\ 2 \\ 1 \end{pmatrix}$ and $b = \begin{pmatrix} 4 \\ -2 \\ 5 \end{pmatrix}$ find:- $a + b, a - b, 3a, 2b - a, 4a + 3b$</p>
😊	😐	😞						
😊	😐	😞						
<p>G: I can calculate the magnitude of a vector</p>	<table border="1"> <tr> <td>😊</td><td>😐</td><td>😞</td></tr> <tr> <td>😊</td><td>😐</td><td>😞</td></tr> </table>	😊	😐	😞	😊	😐	😞	<p>Find the magnitude of vectors a and b above</p>
😊	😐	😞						
😊	😐	😞						